

FLIGHT

First Aero Weekly in the World.

A Journal devoted to the Interests, Practice, and Progress of Aerial Locomotion and Transport.

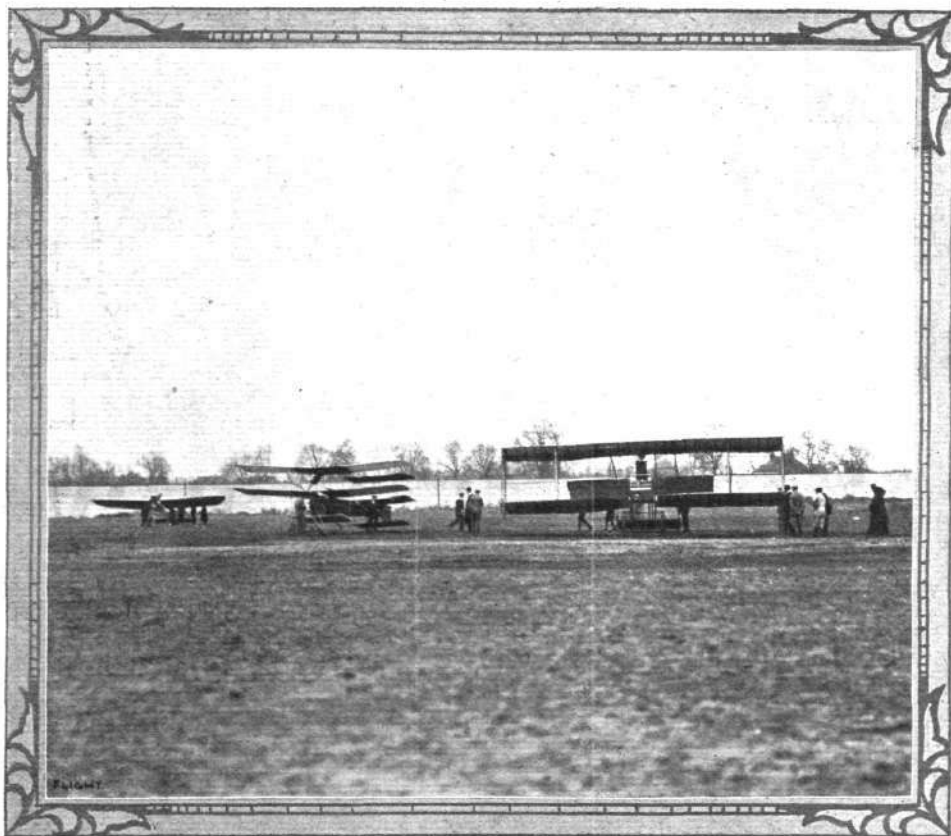
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FLYING MACHINES AT BROOKLANDS ON EASTER MONDAY.—A trio of aeroplanes. From left to right: Mr. Astley's Lane monoplane, Mr. A. V. Roe's triplane, and Mr. Moring's Voisin biplane.

A BRITISH APPEAL TO BRITONS.

NOTHING could well be more absurd than for those who are fostering and encouraging aeronautic development in the United Kingdom to find four months hence that they have—to the tune of some £8,000 or more—chiefly succeeded in enabling the foreigner to increase his lead over the British inventor and British manufacturer of mechanically-propelled flyers. In July next at Bournemouth, the bulk of the prizes, if not all of them, are, as at present arranged, reserved for international events, and consequently, the country which can there display most energy, as well as prove already to be in possession of the highest degree of progress, may quite conceivably leave the aviation ground with its well-earned reputation enhanced to such an extent that the outlook of all competitors is likely to suffer in totally undue proportion to their actual merits. British interests in this respect may well therefore be caused to suffer just at the time when every effort is being made by hundreds of able hands to eliminate past mistakes and past lethargy by systematic research and skilful construction. Evidently in fact, it would never do for the people of this country to let such a risk as this be run at Bournemouth by permitting the whole of the prize money to be put up for international contest.

To a large extent it is true that aviation meetings owe their *raison d'être* to the desire for that mutual aid which comes automatically from open competition. That indeed, is an admirable reason why an adequate fund for international prizes ought to be provided on all these occasions. Even if regarded only as a bait to the foreigner who knows more than us, or who has some knowledge to impart which will be useful to ourselves, these international events with their big prize moneys are to be encouraged on ground of purely selfish policy. But on the other hand, and quite in conformity with the strictest spirit of sport, it is but doing bare justice to our own experimenters at home to include other prizes at these same big international meetings for British flyers only.

Hence FLIGHT welcomes most heartily the appeal that is now being made by Lord Montagu of Beaulieu, as Chairman of the Bournemouth Aviation Committee, for a national fund to be devoted wholly for the provision of prizes to be awarded to those British aviators who take

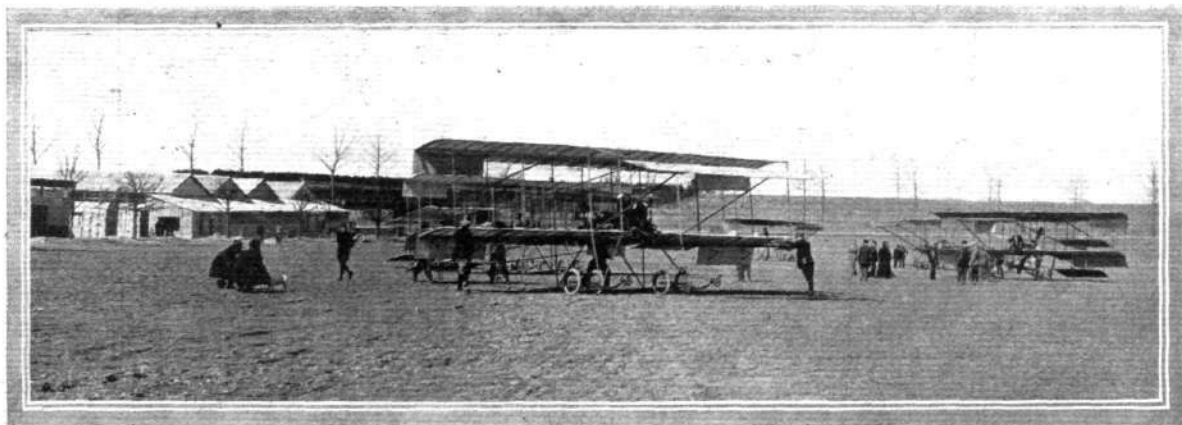
part in that meeting. FLIGHT, moreover, warmly endorses the appeal, both direct to its own readers as well as in the only less direct manner through its readers to their acquaintances and friends amongst the greater British public. The chance is one that cannot be missed with impunity, in that it is of the very greatest import to all true patriots, for as Lord Montagu says:—

“We want national enthusiasm for, and appreciation of, the great progress being made by our countrymen. We want the pounds of the well-to-do and the pennies of the poor. We want not only a club or two, but tens of thousands of the public to be interested in seeing that our country does not remain as she is to-day, behind other Continental countries in a vivid sense of patriotism and a desire to encourage scientific progress. Let all help therefore who can. It is for a good cause.”

We cannot do better, too, than quote still further from the letter he has addressed on the subject to the Press. Referring to the £8,000 prize fund, he says:—

“Some of this, we all hope, will be won by British competitors. But I submit that there should be also special prizes given to encourage national effort, and to reward British competitors who so far have been working in an atmosphere of discouragement compared with their foreign colleagues. When we reflect that some two years ago in Germany patriotism ran so high, and was so practical, that no less than £275,000 was subscribed by tens of thousands of Germans to replace the Zeppelin airship destroyed by a storm, we should as a nation be ashamed of the very poor encouragement given to the many brave and patient experimenters in aviation in this country. And I hold that proper national pride and self-respect and regard for the great issues of war and peace which may depend upon the possession by this country of aeroplanes and men qualified to manage them should lead us to see that the time has come when native enterprise and experiment should be encouraged and rewarded. If help is given to this scheme, as I hope it will be, I feel sure that the nation as a whole will benefit in the future in no small degree.”

Subscriptions are therefore urgently needed at the moment for the good of the whole aeronautic movement in the British Isles. And the question is whether the people of this country will come forward to the rescue of—themselves. We sincerely trust they will, and that thereby not only will British prestige be strengthened abroad, but patient workers at home be encouraged. Subscriptions may either be sent to Lord Montagu himself, at 168, Piccadilly, as Treasurer of the National Aviation Prize Fund, or to the Secretary of the Aviation Committee, Centenary Fêtes, at Bournemouth.



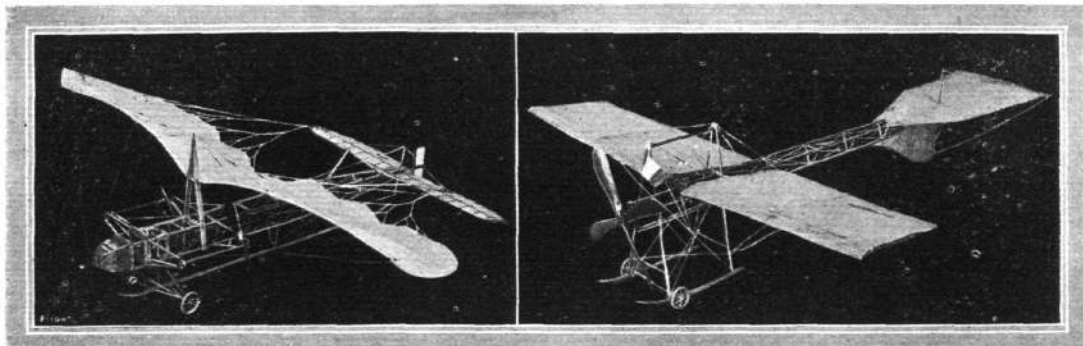
Illustrations Bureau.

In England it is hardly realised yet the rate of aviation progress on the Continent. Already good flyers are abundant, and it is difficult to keep track of the new pupils who are daily completing their initiation into practical aviation. As a typical example of a French aviation school, the above photograph at Mourmelon grounds is very convincing.

MODELS AT OLYMPIA.

THE model exhibit in connection with the Olympia Show this year was one of relatively greater importance than that which characterised the preceding exhibition, although in point of size in relationship to the other

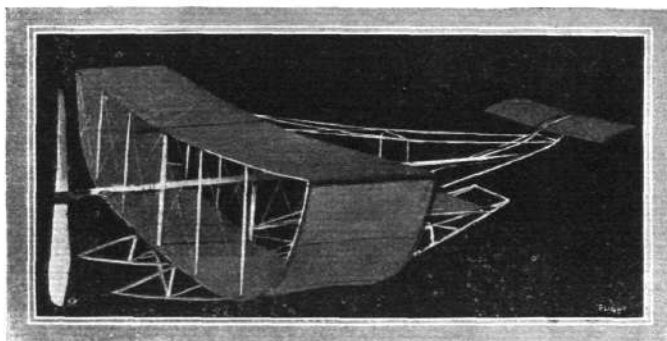
officials undoubtedly resulted in the selection of practically everything that was worth noticing, for there is unfortunately always a very high percentage of model exhibits for which it is impossible to find a single



Monoplane with Chauviere-type sail wings, constructed by W. Pepys Goodchild, and awarded the Royal Aero Club silver medal for workmanship; also the Motor Union cup.

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Model monoplane, constructed by A. Gaitz-Hocky, awarded Royal Aero Club bronze medal for workmanship.



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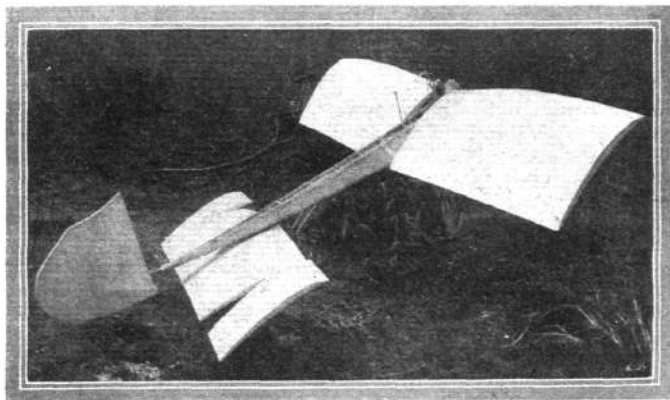
Toy biplane, constructed by G. P. B. Smith, and awarded the Motor Union bronze medal in the Toy Aeroplane Section.

favourable comment. This year, as the wording of the awards indicates, a very carefully considered system formed the basis of the judges' examination. Each model was regarded from at least three points of view. It might be a model illustrating in concrete form some novel idea to be applied to the design or construction of flying machines, or it might be a scale copy of some existing type illustrating pure handicraft in the excellence of its workmanship, or it might be a mere toy, calculated to arouse the rudiments of a deeper interest in flight by lending itself to a simple ocular demonstration of the physical fact.

Either alone or in combination with each other, these considerations were all borne in mind as a model was inspected, and the result has been a very definitely ex-

sections it was naturally smaller. There is a value attached to the model section which the Royal Aero Club and other official bodies do well to encourage, for the model is the embryonic flying machine, and the designer thereof very possibly will become one of the very great aviation engineers of the future. In any case, the encouragement of model making is an encouragement of interest among those who might not otherwise feel personally concerned in the progress of flight, and to encourage an interest in scientific things is to do a great and useful work in the world.

Prizes in the form of medals were awarded to those exhibitors whose work is considered worthy of such recognition by a committee of judges, and the announcement of these awards was made in our last issue. The examination of the various devices on the part of the



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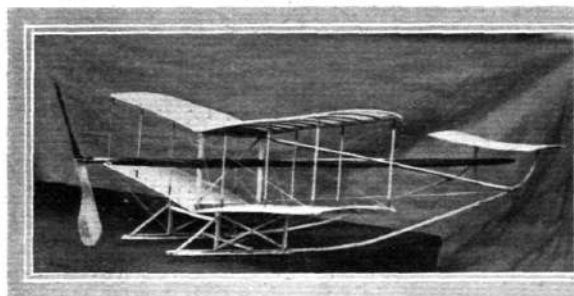
Model monoplane, constructed by J. Urlwin, and awarded the Motor Union bronze medal in the section devoted to models fitted with petrol engines.

pressed reason for the recognition of any exhibit by the award of a medal. If we consider the models of aeroplanes under the first heading, which is that of novel ideas, it is very difficult to find any model aeroplane that was entitled to an award, for although there were many machines of entirely unconventional design they were certainly not of a character that would have justified recognition by the judges of the very vague and ill-defined principles expressed by some of the inventors.

Among the most serious ideas represented by particular models was the Clarke monoplane with its tail in front, but this can hardly be regarded any longer as a novelty, more especially in view of the fact that a full sized machine embodying the principle of a tail in front is

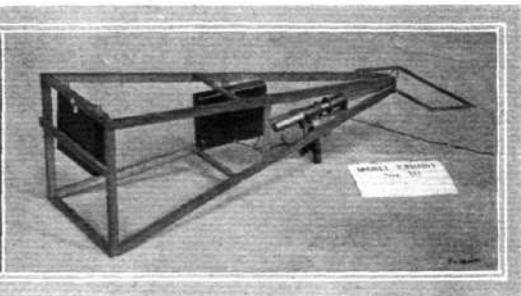
hardly represent quite the same merit, as exhibits, as those of G. P. B. Smith and M. Jones. The Clarke monoplane, which is well known to fly, was not demonstrated.

For an idea pure and simple, the device exhibited by A. E. Creese for indicating to the pilot the direction of cant on an aeroplane in flight was the only exhibit that received an award in this section. It is a simple device, and is calculated to perform a useful purpose. It consists of two small electric lights coupled in circuit with a small battery and an automatic contact-maker formed by a curved tube containing mercury. If the machine cants to one side, the mercury makes contact so as to light up the blue light; if the machine cants in the other



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Toy biplane, constructed by M. Jones, of New Things, Ltd., and awarded a Motor Union bronze medal in the Toy Aeroplane Section.



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A device, exhibited by A. E. Creese, for indicating to the pilot the direction of cant of an aeroplane in flight, awarded the Motor Union bronze medal for an aeroplane accessory.

actually being tried. Another serious design embodying a tangible theory was the biplane exhibited by G. P. B. Smith, which has its lower deck arched so that its extremities join those of the horizontal upper deck. Natural lateral stability is claimed for this feature, and the theory associated therewith is that the upturned ends of the lower deck act as inclined aeroplanes if the machine as a whole suffers lateral displacement. We have seen this model fly, and as a model it undoubtedly does possess considerable lateral stability, but here again the principle involved is one that it would be improper to endorse outright in respect of full-sized machines without further evidence of the application of the principle. The loading of a model, for instance, is very different from that of a full-sized aeroplane, but the wind gusts to which a model is subjected are, approximately, of the same actual intensity. As a model, we have seen this machine almost float in the air as it is pushed from side to side by a gusty wind, but it does not necessarily follow that the inertia and higher loading of a full-sized machine would permit it to behave in the same way. As a toy, it is an excellent device, and as such it has been recognised by the judges as an exhibit of equal merit with a very nicely-made biplane built by M. Jones. Both models were put through practical trials in the annexe, as also were the Burge-Webb monoplanes. These latter are also good flyers, but they are far removed from an actual aeroplane in appearance, and, therefore,

direction, it is the red light that indicates the fact to the pilot. An extension of the same principle was also applied to the mechanical operation of the elevator, but this portion of the apparatus is of less obvious value, and is clearly omitted from mention in the awards.

Under the heading of workmanship, a one-tenth scale model exhibited by Pepys Goodchild obtained a silver medal, while another model monoplane, exhibited by A. Gaitz-Hocky, was awarded a bronze medal. Both showed considerable skill and much care in their building, although neither was an exact copy of any specific full-sized machine. The Goodchild monoplane, however, had the loose sail-wings that characterise the Chauvière monoplane, together with some other features of that machine.

For a model monoplane fitted with a petrol motor, J. Urlwin was awarded a medal devoted to a section specifically recognising model aeroplanes of that class. Such models are, of course, much larger than the majority, but it does not necessarily follow that they represent a more valuable type of model with which to experiment. They do, however, represent a scale of construction that, if successful, might lend itself to very useful research. We imagine that those who are investigating flight by means of model monoplanes fitted with petrol engines will find themselves confronted with many difficulties before they obtain satisfactory results, but we wish them success all the same.

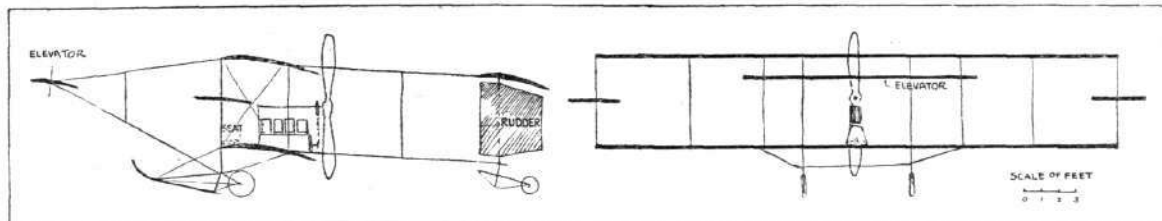
Prizes in Italy.

AMONG the prizes offered by the Aero Club of Italy, of which the Duke of Abruzzi is honorary

president, may be noted one of £40 for the first flight of 500 metres, £60 for the first flight of 1 kilom. on an Italian aeroplane, £40 for a flight of 5 kiloms. in a circuit, and £60 for a trip of 10 kiloms. across country.

FLYER SILHOUETTES FROM OLYMPIA.

GEORGE AND JOBLING BIPLANE.



Leading Particulars of the George and Jobling Biplane.

General Dimensions.—Areas—Main planes, 426 sq. ft.; fixed tail, 50 sq. ft.; elevator, 38 sq. ft.; rudder, 25 sq. ft.

Lengths.—Span, 30 ft.; chord, 5 ft. 6 ins. (15 ins. additional chord for flexing tips); camber, $3\frac{1}{2}$ ins., situated about 24 ins. from leading edge; leverage of rudder, about 12 ft.; gap, 5 ft.; overall length, 30 ft.

Angle.—Incidence, $9\frac{1}{2}$ degs.

Materials.—Timber—Principal struts American elm, others spruce; hollow spars and struts, main ribs between struts I section; Dunlop fabric.

Engine.—60-h.p. Green.

Propeller.—George and Jobling, 28 lbs. weight; diameter, 9 ft.; pitch, 10 ft.; material, timber, single piece.

Weight.—Machine with engine, 662 lbs.; driver, oil, petrol, water, 200 lbs.; total flying weight, 862 lbs.; loading (all weight supported on main planes), 2.6 lbs. per sq. ft.

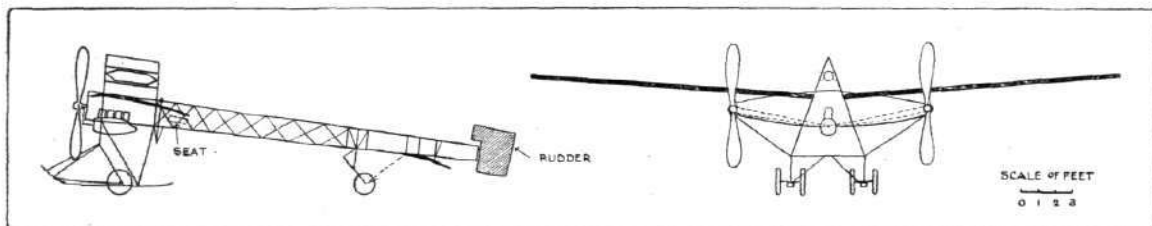
Speed of Flight.—48 m.p.h.

System of Control.—Balancing flexing tips, elevator, rudder.

BIPLANE designed by A. E. George and principally remarkable for the fact that all the struts and spars are hollow. The outriggers that carry the elevator and tail are made of bamboo. A curious form of combination wheel and ski chassis has been adopted, the skis being wholly in front of the wheels and normally inclined upwards; their object is mainly to assist the machine

over holes and small ditches. A very interesting feature of the machine is the method of mounting the single chain-driven propeller upon a stationary axle, which is held by adjustable tubular steel struts upon the engine bearers. This stationary axle lies immediately above the engine, and the mounting of the propeller is thus entirely independent of the framework of the machine.

THE SPENCER-STIRLING MONOPLANE.



Leading Particulars of the Spencer-Stirling Monoplane.

General Dimensions.—Areas—Main planes, 200 sq. ft.; fixed tail, about 19 sq. ft.; elevator, about 19 sq. ft.; rudder, 6 sq. ft.

Lengths.—Span, 34 ft.; chord, 6 ft.; camber, 3 in., situated about 2 ft. from leading edge; leverage of rudder, 21 ft. 6 in.; skid track, 5 ft.; overall length, 27 ft.

Angles.—Incidence, 10° ; dihedral, 1 in 17.

Materials.—Timber: English ash throughout; fabric, Dunlop.

Engine.—40-h.p. "R.H."

Propellers.—Two Spencer-Stirling; diameter, 6 ft. 6 in.; pitch, 10 ft.

Weight.—Machine, 382 lbs.; engine, 268 lbs.; driver, oil, petrol and water, 200 lbs.; total flying weight, 850 lbs.; loading (all weight supported on main planes), 4.3 lbs. per sq. ft.

Speed of Flight.—40 m.p.h.

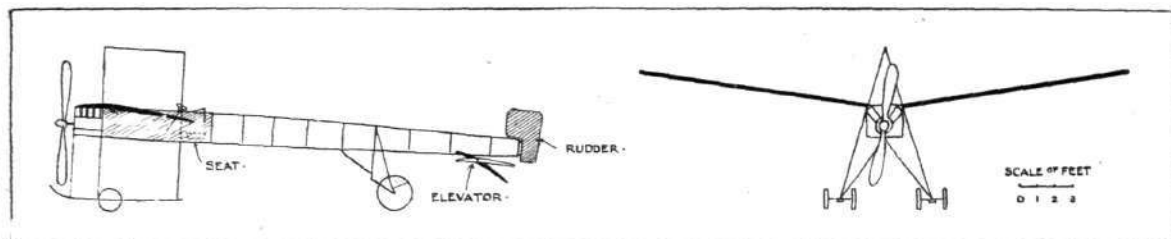
System of Control.—Warping, elevator and rudder.

Price.—£650.

THE characteristic feature of this machine is the use of two tractor screws, which are mounted on outriggers in front of the main wings, and are driven by chains direct from the engine. Although neither of the chains is crossed, the propellers do not both revolve in the same direction, as a reverse gear is included in the bracket

that supports one of the propellers. The chassis is an example of the "A" frame, and the sloping members are carried to an apex. Two radiators lie between the upper portions of the frame, but although this is a neat and compact position for them, it seems to us that they are likely to interfere somewhat with the pilot's view.

THE E.N.V. MONOPLANE.



Leading Particulars of the "E.N.V." Monoplane.

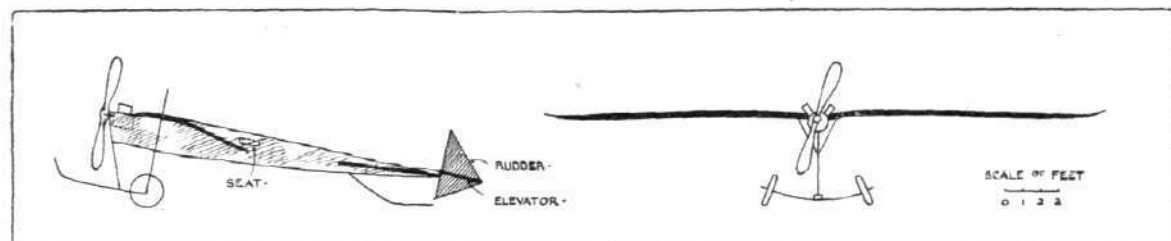
General Dimensions.—Areas—Main planes, 160 sq. ft.; fixed tail, 18 sq. ft.; elevator, 17 sq. ft.; rudder, 6 sq. ft.
Lengths.—Span, 27 ft.; chord, 6 ft. 6 ins.; camber, 4½ ins.; leverage of rudder, 21 ft.; overall length, 29 ft.; skid track, 4 ft.
Angles.—Angle of incidence 6°; dihedral, 1 in 24.
Materials.—Timber.—Ash frame, spruce spars.
Engine.—40-h.p. "E.N.V."

Propeller.—Howard Wright; diameter, 6 ft.; pitch, 2 ft. 3 ins.
Weight.—Machine, 250 lbs.; engine, 155 lbs.; driver, oil, petrol and water, 200 lbs.; total flying weight, 605 lbs.; loading (all weight supported on main plane), 3½ lbs. per sq. ft.
Speed of Flight.—35 m.p.h.
System of Control.—Elevator, rudder, warping of main planes.
Price.—£630.

MONOPLANE constructed for Warwick Wright by Howard Wright. It is a machine of modified Blériot design, but having an original system of combined steel and wood frame construction. The chassis is an example of the "A"

type, and is made of timber; it is surmounted by a steel frame for the support of the engine. The machine is carried upon wheels and skis. The radiator is placed under the main wings, as on the Santos-Dumont monoplane.

THE HANDLEY-PAGE MONOPLANE.



Leading Particulars of the Handley-Page Monoplane.

General Dimensions.—Areas—Main planes, 150 sq. ft.; elevator, 6 sq. ft.; rudder, 6 sq. ft.
Lengths.—Span, 32 ft. 6 ins.; chord, 6 ft.; camber, 2½ ins.; skid track, 6 ft.; overall length, 20 ft.
Angles.—Angle of incidence, 6°; dihedral, nil.
Engine.—20 to 25-h.p. Advance.

Propeller.—Diameter, 6 ft. 6 ins.; pitch, 3 ft. 6 ins.
Weight.—Total flying weight, 450 lbs.; loading (all weight supported on main planes), 3 lbs. per sq. ft.
Speed of Flight.—35 m.p.h.
System of Control.—Elevator and rudder (warping optional).
Price.—£375.

MONOPLANE of the bird's wing type, designed somewhat on the lines of the Weiss model but fitted with a cross-tail serving the purpose of an elevator and rudder. This tail is one of the special features of the design, being mounted on a single pivot so arranged that it cants when steering; the object being to create a torque to assist in maintaining stability.

The most interesting minor detail of this machine is the ash axle that carries the wheels upon which the machine is mounted. This axle is a specially selected piece of wood, and its natural flexibility is used as a substitute for springs. The wheels are splayed, and the wheel hubs have been made 12 ins. long in order to give great strength.

A French Military School at Pau.

WITH a view to establishing a military flying school at Pau, the French military authorities recently approached the Town Council of Pau asking for the necessary land for an aerodrome there, together with accommodation for 25 officers. The Mayor has sent a favourable reply in the name of the town, promising every assistance when the project shall have reached a more definite stage.

Birdseye Views of the Alps.

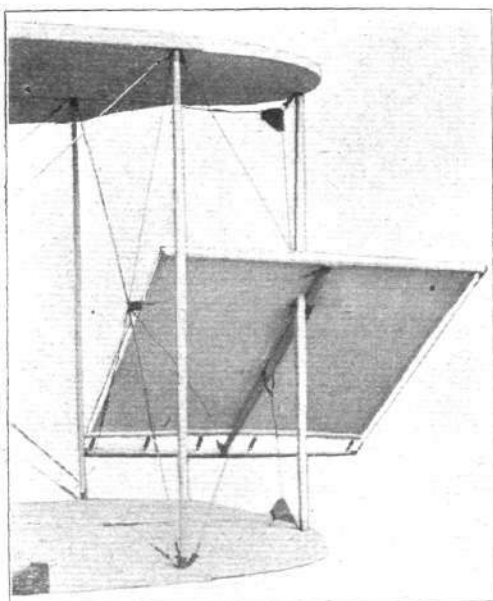
It is reported from Lucerne that the Astra Co. have secured a concession for an aerial service to commence on June 1st next. Two airships are now under construction, one of 7,000 cubic metres to carry fifteen, and the other of 4,500 cubic metres to carry eight passengers. It is proposed that excursions should be run from Lucerne to view the lake and mountains.

THE NEW "SHORT" BIPLANE.

(Concluded from page 229.)

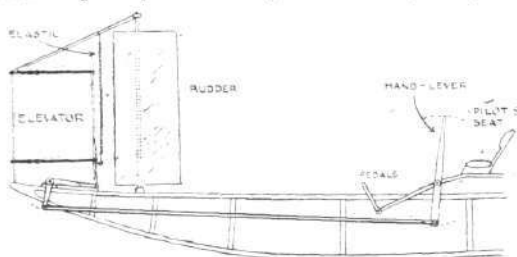
Supplementary Surfaces.

THE supplementary surfaces on the Short biplane consist of a biplane elevator, mounted on the front end of the chassis, a single vertical rudder situated immediately behind the elevator, and a fixed horizontal and vertical



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View of one of the balancing planes on the Short biplane. The fabric is stretched between the leading and trailing edges by a series of springs, which allow it to take its own camber from the wind pressure.

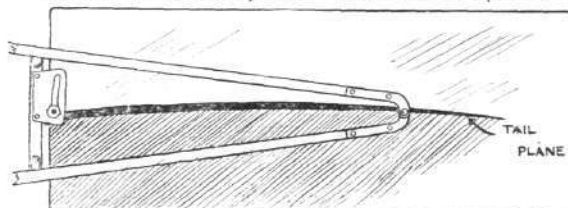
tail carried by a triangular outrigger behind the main planes. The horizontal member of the tail is cambered and is so mounted that its angle of incidence can be adjusted, but not while in flight. Even under normal conditions it is intended that this angle shall have a slight positive value, but the tail is not regarded as a load carrying member of the machine. The elevator has flexible surfaces so arranged that the pilot can camber them to give a positive or negative lift as may be required



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Diagrammatic sketch illustrating the control of the elevator and the rudder on the Short biplane. The elevator planes flex from the front edge by the manipulation of a lever. The rudder pivots on a vertical column by the action of pedals. Both are normally held in their neutral position by elastic springs.

for the purpose of maintaining equilibrium or altering the attitude of flight. In its fundamental idea, this flexing of the elevator follows a principle introduced by Wright, but there are important differences in construction between the elevators of the two machines, notably in the fact that the planes of the Short elevator flex from the leading edge, which forms the fixed member of the structure.

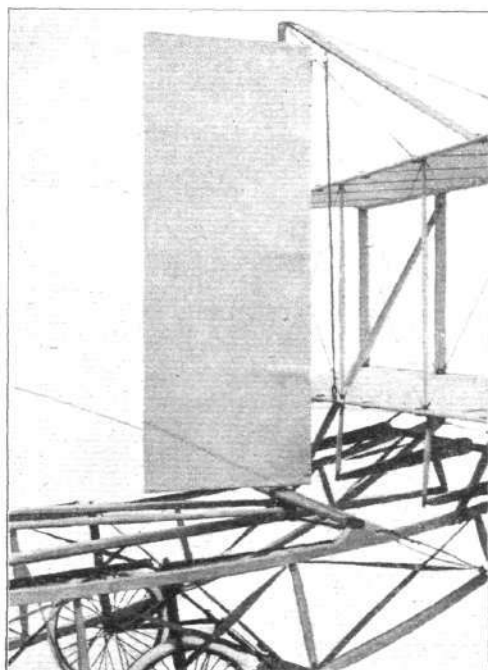
Two other supplementary surfaces are provided at the extremities of the main planes. These consist of pivoted



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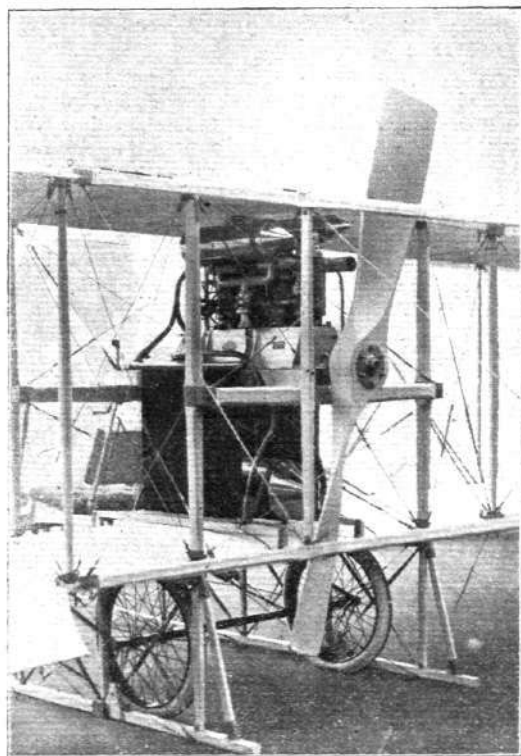
Sketch illustrating the mounting of the horizontal tail plane on the Short biplane. The tail is fixed in flight, but its angle of incidence is adjustable within a small range by means of the slotted bracket illustrated above.

balancing planes for maintaining lateral equilibrium. Their construction embodies a recent patent and is particularly ingenious, inasmuch as the plane consists merely of a horizontal sheet of fabric stretched between two spars by the action of springs joining the trailing edge of the fabric to the rear spar.



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View of the rudder, which is situated in front, on the Short biplane.



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View of the engine and propeller on the Short biplane. The engine is mounted high up in the gap.

A fore and aft spar joins the two transverse spars and serves as a means of attachment to one of the vertical struts between the main planes. Provision is made for



THE HORNSTEIN BIPLANE.

THE characteristic feature of Mr. Hornstein's machine, on which he had a mishap on Sunday, is extreme lightness of construction, his argument being that, for experimental purposes at any rate, the greater number of advantages lie with such a system. An interesting detail is the use of cork pads as distance-pieces in the construction of the skids. Each skid consists of two thin strips of wood, set edge on to the ground and braced together by thin bolts passing through the cork pads, as shown in the accompanying sketch. This system of construction, although extremely light, is not very rigid laterally and the skids do not keep their shape very well, but it has been Mr. Hornstein's contention that anything capable of bending would be less liable to break, and therefore safer in the early days of experiments when it is generally a case of either bending or breaking something.

Mr. Hornstein's biplane has a span of 10 metres, and a chord of 2 metres, the supporting area of the main planes being thus 40 square metres. In front is a biplane elevator, having a span of 2.35 metres, and a chord of 85 cms. Two machines of approximately similar dimensions have been constructed, one being fitted with a Green engine and the other with a J.A.P. Chauvière

tilting these balancing planes either to a positive or negative angle, and owing to the method of mounting the fabric the planes automatically assume a camber as the result of the air pressure.

Control.

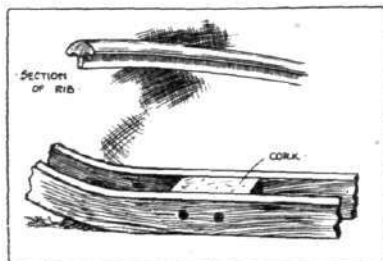
Control of the Short biplane is effected by means of two levers and a pair of pedals. The lever held in the pilot's left hand operates the elevator by a simple to and fro movement. The lever held in the pilot's right hand controls the lateral equilibrium of the machine by movements of the balancing planes. The pedals operate the rudder, which is normally held in a straight-ahead position by the action of elastic springs.

The coupling up of the right hand lever to the balancing planes is such that the pilot pushes the lever away from him when the right hand extremity of the machine is tilted above its proper level. It will be observed that the head resistances of the two balancing planes are equal to one another for any angle, consequently the machine does not tend to swerve from a straight path as the result of their use, and there is no need to employ the rudder in order to keep the course, as is the case with wing warping.

The Engine and Propeller.

The engine on this machine is a four-cylinder 35-h.p. Green motor having a bore and stroke of 105 by 120 mm. and is mounted on two wooden girders that pass fore and aft between a couple of massive transverse girders bolted to four of the vertical struts between the main planes. The engine, as we have already pointed out, is raised above the lower deck so that the axis of the crank-shaft lies about midway in the gap. The two-bladed wooden propeller is direct-coupled to the crank-shaft. The petrol-tank lies just above the lower deck between vertical radiators on either side. Owing to the position of the engine it has been possible to fit a starting-handle on a swivelling-bracket so that the engine can be started without handling the propeller, a refinement that is commendable, for the use of the propeller as a starting-handle unquestionably involves an element of danger that should be unnecessary.

propellers of 2.1 metres diameter and 1.6 metres pitch are employed. The estimated total weight of the machine in flight is 403 kilogs., including 190 lbs. for the pilot.



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Sketches illustrating two interesting details on the Hornstein biplane. The rib is solid, and steam bent to the required curvature. Each skid is made of two strips of wood, trussed by cork pads.

The ribs that stiffen the fabric of the main planes are also of unusual construction. They have a modified T section, as shown in the accompanying sketch, and are steam bent to the required curvature.

The Royal Aero Club of the United Kingdom

OFFICIAL NOTICES TO MEMBERS

Committee Meeting.

A meeting of the Committee was held on Tuesday, the 22nd March, 1910, when there were present:—Mr. Roger W. Wallace, K.C., in the chair, Mr. Griffith Brewer, Mr. Ernest C. Bucknall, Col. J. E. Capper, C.B., R.E., Professor A. K. Huntington, Mr. V. Ker-Seymer, Mr. J. T. C. Moore-Brabazon, Mr. C. F. Pollock, Mr. J. Lyons Sampson, Mr. Stanley Spooner, and joint secretaries, Capt. E. Claremont, R.N., and Harold E. Perrin.

New Members.—The following new members were elected:—

| | |
|---------------------|---------------------------|
| Prof. A. Barr. | Joseph Harold Mandelberg. |
| R. O. Cary. | Norman Clark Neill. |
| Hugh Bernard Fitch. | J. Scott Russell. |
| Chester Fox. | Herbert Leslie Searle. |
| P. J. E. Gregory. | Capt. Victor Hart Secker. |
| Charles Lane. | Gordon Arthur Wellings. |
| Percy K. Le May. | H. R. Wilding. |

Sub-Committees.

The following Sub-Committees have been appointed for the year 1910:—

Finance Committee:—

Griffith Brewer.
Ernest C. Bucknall.
Prof. A. K. Huntington.

Ground Committee:—

Ernest C. Bucknall.
Hon. Maurice Egerton.
Percy Grace.
Prof. A. K. Huntington.
V. Ker-Seymer.

Balloon Committee:—

Maj. Sir A. Bannerman,
Bart., R.E.
Griffith Brewer.
John Dunville.
Philip Gardner.

Technical Committee:—

Maj. Baden-Powell.
A. E. Berriman.
Griffith Brewer.
Col. I. E. Capper, C.B., R.E.
W. J. Crampton.
S. F. Edge.
Col. Henry C. L. Holden,
R.A., F.R.S.

Sir Charles D. Rose, Bart.
Hon. Arthur Stanley, M.P.

F. K. McClean.
J. T. C. Moore-Brabazon.
Vice-Admiral Sir George
Neville, C.V.O., K.C.B.
Hon. C. S. Rolls.

B. H. Barrington Kennett.
Dr. W. J. S. Lockyer.
C. F. Pollock.
A. Mortimer Singer.

Prof. A. K. Huntington.
Charles Jarrott.
Maj. F. Lindsay Lloyd.
Sir Hiram Maxim.
J. T. C. Moore-Brabazon.
Mervyn O'Gorman.
Hon. C. S. Rolls.
F. R. Simms.

Competition Rules Committee:—

| | |
|-------------------------|-------------------------------|
| Prof. A. K. Huntington. | J. W. Orde. |
| V. Ker-Seymer. | Hon. C. S. Rolls. |
| Major F. Lindsay Lloyd. | Marquis de Mouzilly St. Mars. |

Publication Committee:—

| | |
|---------------------|------------------|
| Ernest C. Bucknall. | C. F. Pollock. |
| John Dunville. | Stanley Spooner. |

House Committee:—

| | |
|---------------------|----------------|
| Ernest C. Bucknall. | V. Ker-Seymer. |
| John Dunville. | |

The Chairman (Mr. R. W. Wallace, K.C.) is *ex-officio* member of all committees.

Library.

Prof. A. Lawrence Rotch has presented to the library a copy of his book, entitled, "The Conquest of the Air, or the Advent of Aerial Navigation."

Sir Claude Champion de Crespigny, Bart., has presented the Club with a picture of a rhinoceros shot by him in British East Africa in 1905.

Bournemouth Aviation Meeting.

Special hotel arrangements are being made for the members, and full details will be published shortly.

Flights at Eastchurch.

Many members visited Eastchurch and Shellbeach during the Easter holidays, and witnessed flights by Mr. Cecil Grace, Hon. C. S. Rolls, Mr. J. T. C. Moore-Brabazon and Mr. A. Rawlinson, particulars of which appear in another column.

Nice Aviation Meeting.

The Royal Aero Club will be represented at the Nice Meeting by the Hon. C. S. Rolls and Mr. A. Rawlinson, who have both entered for all the competitions.

Blériot Memorial.

The memorial erected at Dover to commemorate the historical cross-Channel flight of M. Louis Blériot on July 25th of last year will be unveiled on Friday, 8th April, 1910. The ceremony will, it is hoped, be performed by Lord Brassey, Lord Warden of the Cinque Ports, and M. Blériot has promised to travel specially from Pau to be present. The Chairman of the Club (Mr. R. W. Wallace, K.C.) will attend, and invitations have been sent to the President of the Aero Club de France and the Mayor of Calais. The memorial was erected by the Royal Aero Club through the generosity of one of its members, Mr. Alexander Duckham.

E. CLAREMONT, CAPT. R.N.,
HAROLD E. PERRIN,

166, Piccadilly.

Joint Secretaries.

THE CANNES MEETING.

IN spite of many difficulties in the way of finding a suitable ground, &c., the Cannes Meeting opened on Sunday last very successfully, and seven of the flyers made flights of varying lengths. The best were those of two of Henry Farman's pupils, Crochon flying for 1h. 9m. 29s., while Christiaens' best was 1h. 9m. 2½s. The other flights during the day were: Edmond (Henry Farman), 33 mins. 45½ secs.; Barataux (Wright) 21 mins. 57½ secs.; Molon (Blériot), 13 mins. 52 secs.; Sands (Antoinette), 4 mins. 59½ secs.; Reimsdyck (Curtiss), 2 mins. 17½ secs.

An exciting incident was witnessed during the racing. Molon was flying round when Christiaens passed under him, and the current from the Farman pro-

peller caught the Blériot and drove it out of its course. Molon managed to right the machine, but could not get back on the track, and came down somewhat sharply in a field, with the result that his machine was damaged. On Monday there was a chapter of accidents, Herr Weisenbach, who was flying on a German Wright machine, landed in a ploughed field and broke up the chassis of his machine and the propeller, while Rigal, on a Voisin, for some reason got out of his course, and after flying over the grand stand landed in some fir trees. Frey, on a Farman, also broke a wheel through landing too suddenly, while Sands came down on one wing and consequently damaged it. The longest flights of this day were those of Crochon, 53 mins. 17½ secs., and Frey, 38 mins. 4½ secs.

PROGRESS OF FLIGHT ABOUT THE COUNTRY.

(NOTE.—Addresses, temporary or permanent, follow in each case the names of the clubs, where communications of our readers can be addressed direct to the Secretary. We would ask Club Secretaries in future to see that the notes regarding their Clubs reach the Editor of FLIGHT, 44, St. Martin's Lane, London, W.C., by 12 noon on Wednesday at latest.)

Aerial League (CARLTON HOUSE, REGENT STREET, S.W.).

FORTHCOMING fixtures include lectures at Hampstead on April 12th, at Trinity Church Hall, Finchley Road, N.W., at 8.30 p.m., the Mayor of Hampstead in the chair, lecturer Mr. J. H. Ledebor, B.A.; also at Worcester, April 22nd, public meeting and lecture, Lord Hindlip presiding. The Mayor of Rochester and the Mayor of Dover have kindly consented to preside at meetings to be held in these towns during this month.

Aero Models Association.

AT Caxton House, Westminster, S.W., on March 23rd, nearly 100 attended the inaugural meeting of the Aero Models Association, a branch of the Aviation Section of the Motor Union. Mr. C. H. Dodd (Chairman of the Executive Committee of the Motor Union) presided. In extending a welcome to those present he explained that the formation of a separate Association to deal exclusively with the design, construction, and working of aero models had been under consideration for some time, and he assured those present that the Motor Union and the Aviation Section would use their influence and organisation towards providing an institute for those interested in the design, construction, and flying of models. At the institution all reasonable advantages in the way of technical advice, facilities for the interchange of ideas, the exhibition of models, use of a library, &c., would be available. A practice and experimental ground in the London suburbs would also be available in a short time. He thought that the Association would do much useful work by encouraging members to work out novel ideas. As a further stimulus, arrangements would from time to time be made by the Association for visits to flying grounds and the workshops of aeroplane and airship manufacturers at home and abroad, and prizes would be offered for models which show originality of design, practicability, and excellence of construction.

A number of well-known model enthusiasts, including Major J. N. C. Kennedy, R.E., Messrs. A. C. Horth, A. F. Roberts, G. P. B. Smith, L. Blin Desbieds, H. Burge Webb, Manning, Sayers, and Rev. — Hutchinson and Col. H. S. Massy, C.B., addressed the meeting, and the following resolutions were unanimously adopted:—

"That those present approve the aim and objects of the Aero-Models Association, and are prepared to do all in their power to support the movement for stimulating interest in aviation practice by means of the study of models."

"That a permanent committee be appointed, consisting of the provisional committee, with power to add to their number. Any additions to be subjected to the approval of the Executive Committee of the Motor Union."

Hampshire Aero Club (48, PALMERSTON ROAD, SOUTHSEA).

UNDER the presidency of Mr. Patrick Alexander, an extraordinary meeting was held at the headquarters of the H.Ae.C. to organise a model competition to take place on some date in June to be hereafter notified.

Col. Massy, late President of the Aerial League of the Empire and a member of the H.Ae.C., has generously contributed £10 for prizes and medals. It has been resolved that models of any size may compete on condition that their total weight does not exceed 10 lbs.

Those who are interested and wish to have full particulars of the competition are kindly requested to communicate with Capt. Marriott, at the above address.

Kite and Model Aeroplane Assoc. (27, VICTORY RD., WIMBLEDON)

THE usual contests for kites and gliding will be held during the summer, also competitions for youths for prizes given by the Aerial League of the British Empire. As soon as arrangements have been made, full details will be published in FLIGHT.

Northumberland Ae.C. (ROYAL TURK'S HEAD, NEW-CASTLE-ON-TYNE).

ON Wednesday, March 16th, in the club room, Mr. David Balfour read a very interesting paper on "Aviation," illustrated by about 100 splendid slides, before an attendance of 50 or more members. Mr. Hereward Brackenbury, of Elswick Works, a vice-president of the club, was in the chair. At the close the lecturer was cordially thanked for his paper, and an announcement was made that the committee had high hopes of successfully negotiating for a suitable flying ground for the members at an early date, and it was confidently expected that three or four machines would be ready for trial flights within the next four or five weeks; and as one of the members already possesses a glider, and one is to be purchased for the use of the club, everything points to a very interesting summer season.

Oldham Aero Club (5, CHURCH TERRACE).

A MEETING of the above club was held on Thursday, March 10th, at the Oriental Café. Several new members were proposed, and after the business was concluded a pleasant evening was spent in discussion. Messrs. W. P. Dean, J. Dellow, F. W. Partington, J. H. Sumner, and C. Buckley gave their impressions of the Manchester model show. Much useful information was obtained from the remarks made. It was decided to take a club workshop near the centre of the town for the use of club members, several of whom are making man-lifting gliders. There was a good attendance, and every prospect of much useful work being done to further the new science.

Women's Aerial League (227, STRAND, W.C.).

FORTHCOMING events, which have been arranged by the Committee, include the following:—

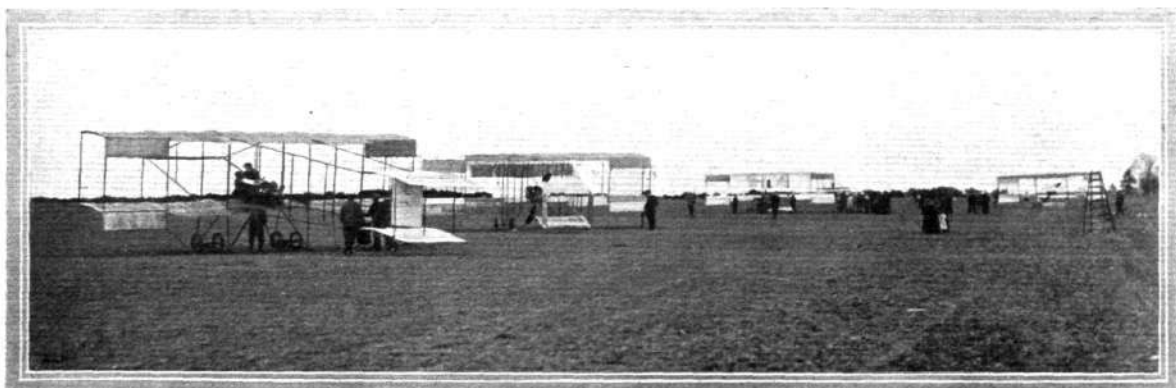
Aerial Tea, Criterion Restaurant, Thursday, April 7th, 3 o'clock.

Hostess: Mrs. Sidney Lacon. Short speeches and music.

Lecture, Boys' and Girls' Aerial League, Miss Gertrude Bacon, Tuesday, April 12th, 3 o'clock.

Aerial Tea, Criterion Restaurant, Thursday, May 5th, 3 o'clock.

Hostesses: Lady Beachcroft and Miss Jones-Parry. Speakers: Sir Percy Scott and Sir Melville Beachcroft. Music.



Illustrations Bureau.

Another view of the Mourmelon Aviation School, showing the ordinary business-like methods which pervade the routine of teaching the young idea how to fly.

AVIATION NEWS OF THE WEEK.

H.M. the King at Biarritz.

DESPITE the counter attractions at Cannes and Marseilles, the Biarritz meeting opened in brilliant fashion on Tuesday last, and King Edward paid a visit to the ground during the afternoon. Just previous to the arrival of the Royal party Chavez attempted to fly, but owing to an error in steering he crashed into a tree and smashed his Farman machine. Leblanc, however, made several flights on his Blériot monoplane, and at His Majesty's request M. Blériot also flew round the ground. Subsequently Capt. Burgeat, under his bird-name of Georges Bailly, flew a complete circuit of the aerodrome, but smashed his Antoinette machine in landing.

Fine Flight by the Hon. C. S. Rolls.

ON Thursday of last week at Sheppey the Hon. C. S. Rolls flew over from Short's factory at Leysdown to Eastchurch on a new Short-Wright machine, and after a rest made a long cross-country flight. Rising at once to a height of 500 ft., Mr. Rolls gradually went higher to 1,000 ft. while flying in the direction of Queenborough. Passing over that port he returned to Leysdown and over Eastchurch village to the flying ground, where he made a circuit before coming to rest in front of his shed, having accomplished a trip of about 26 miles. On the following day the strong wind prevented any lengthy flying, but in the evening both the Hon. C. S. Rolls and Mr. J. T. C. Moore-Brabazon made short flights, Mr. Rolls circling the aerodrome twice and Mr. Moore-Brabazon once.

Other Doings at Eastchurch.

MR. P. GRACE made a cross-country flight from Eastchurch to Snellbeach on the 23rd ult., and on the following day he successfully carried out the necessary trials for the Royal Aero Club prizes for the circular mile and 250 yards straight flight. Afterwards he flew back to Eastchurch and brought his Short-Wright machine to rest almost in front of his shed there.

On Saturday last the wind was against flying, and except for some short trials by the Hon. C. S. Rolls and two ten-minute flights by Mr. Grace, there was little done, while the following day saw Mr. Cecil Grace fly 10 miles in 17 minutes, and shorter flights by Mr. Rolls and Mr. Moore-Brabazon. Mr. A. Rawlinson arrived with his Henry Farman biplane during the week-end, and on Monday he made a trial flight of a mile. The other flyers out on Easter Monday were Mr. Rolls and Mr.

Grace, and the latter in the course of nearly a dozen short flights covered about 40 miles.

Mr. Rawlinson was flying on Tuesday night for about 20 minutes, and Mr. Grace, who was also out, met with a slight mishap. When about 30 feet from the ground, his machine suddenly dipped and came down head first. Naturally the fore part was badly smashed, but Mr. Grace escaped unhurt.

Flying at Apperley Bridge.

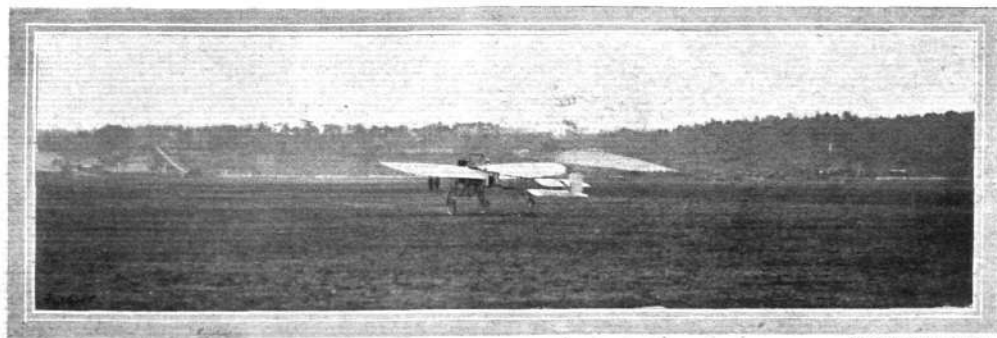
AFTER making three short flights on his cross-Channel Blériot at the Apperley Bridge grounds, near Bradford, on the 22nd ult., Mr. J. W. House had a nasty smash, although he himself escaped unhurt. He was flying splendidly when the motor suddenly commenced miss-firing, and in his consequent sudden descent he failed to clear a stone wall, with the result that one wing and the propeller were crumpled up.

Mr. Hornstein's Accident.

AMONG the many British flyers who have been quietly experimenting in England is Mr. Hornstein, who on Easter Sunday met with a mishap while flying on a private ground at Halliford, near Shepperton-on-Thames. On the previous Friday Mr. Hornstein had flown a mile and a quarter at a height of about 40 ft., and it was from about the same height that the machine came down suddenly on Sunday, apparently due to a mistake in steering. Mr. Hornstein was pinned beneath the machine, and sustained injuries to the head. He has for some time been designing machines that have been constructed by the Thames Bank Wharf Co., and has recently been experimenting with the biplane with which the accident occurred. Elsewhere we give a few details of the machine.

Easter Monday at Brooklands.

WITH a view to stimulating the dozen or so flyers who are experimenting at Brooklands, the B.A.R.C. offered a prize for the best flight on Easter Monday, exceeding fifty yards in length. This was won by Mr. Manders, who during the afternoon flew about 500 yds. on his cross-Channel Blériot-type machine, but almost immediately after came to grief through collision with a garden roller on the ground. Mr. A. V. Roe had a new triplane out, in which the bottom pair of wings had been shortened. Mr. Astley was also out on



FLYING MACHINES AT BROOKLANDS ON EASTER MONDAY.—Mr. Astley's monoplane taking a run across the aerodrome.

"Flight" Copyright.

his Lane monoplane, while Capt. Maitland was trying Mr. Moring's big Voisin, but these three machines did not get off the ground for any appreciable distance.

Percy Richardson, Aviator.

ON Easter Monday, Mr. Percy Richardson—well-known in the motoring world as the managing director of the Sheffield-Simplex motor works—made his first practical acquaintance with aviation on a Blériot monoplane, in Wentworth Park, near Sheffield. At the very first attempt Mr. Richardson succeeded in flying a short distance, and altogether he made five short flights on his first day. During the fifth flight he ascended to a height of about 30 ft. above the ground, and thought he was getting on pretty well when his engine stopped, and the art of graceful descent not having yet been learned, the machine was somewhat the worse for the landing, but Mr. Richardson himself was completely unhurt, and has a very natural feeling of satisfaction about his Easter experiences.

A Monoplane at Wembley Park.

THE Easter holiday crowd which visited Wembley Park on Easter Monday witnessed some good short flights by M. Andree Tourin on the Blériot monoplane with which he recently made some lengthy trials in Algiers. In the afternoon the gusty wind precluded any but straight flying, and M. Tourin several times flew for half-a-mile. Later, when the wind dropped somewhat, M. Tourin made a complete circuit of the park.

Flying Meetings in Great Britain.

SUBJECT to the International regulations being complied with as to the flying ground, &c., it is practically certain that the second International meeting will be held at Lanark from August 6th to the 13th. With regard to further national meetings in Great Britain preliminary applications have been received by the Royal Aero Club for meetings to be held at Doncaster and Blackpool.

Model Aero Club for Edinburgh.

MR. J. H. ALEXANDER, of 27 Wilton Road, Craigmillar Park, Edinburgh, writes: "I am desirous of forming a model aero club in Edinburgh. Should any of your readers, residing in Edinburgh or in the district around, desire to join, they might send me a stamped postcard with their address and I shall let them know the date and place of the first meeting."

Mr. Grahame-White Flies for an Hour.

DURING the past week Mr. Claude Grahame-White has been experimenting at Chalons Camp with the Henry Farman machine on which he intends to fly into London. His first flight was on Saturday, when he covered about 50 kiloms., and later made a second trip of 20 kiloms. with a passenger, while on Sunday he flew for 65 minutes, his average altitude being about 150 ft. Later in the day he carried Kulher as a passenger, and in a subsequent flight took his mother for an aerial jaunt lasting some 15 minutes.

A.C.F. Accepts F.A.I. Ruling.

THE C.A.M. should be very thankful to the Automobile Club of France for having given them an opportunity to retire gracefully from the very awkward position which they had attempted to take up with regard to French meetings. The A.C.F. have now decided not to proceed further with the meeting which was to be held at Rheims from July 14th to 24th, and to devote the 200,000 francs prize money to long-distance prizes. One of £6,000 (150,000 francs) will be given for the first aeroplane to fly from Paris to Brussels, while the remaining £2,000 (50,000 francs) will be awarded to the first dirigible to fly from Paris to London. It will be remembered that this meeting was arranged in spite of the fact that the F.A.I. allotted the same dates to Great Britain for an International Meeting at Bournemouth.

Henry Farman Wins a Prize.

LAST Monday Henry Farman entered for the Central School Prize, for a cross-country flight with passenger, and easily won it with a trip of ten kilometres in which he was accompanied by Madame Darty, the time taken being 8 minutes. He flew from Etampes across the Arche Valley to Angeville and afterwards returned alone to his starting point.

A Farman School at Etampes.

THE military authorities at Chalons having become apprehensive, owing to some of the flying men occasionally straying over the batteries and military quarters, are seeking to impose greater restrictions on the flyers, and in consequence many of them are seeking fresh quarters. Mr. Henry Farman has arranged to transfer his school to Etampes, where the Agence-Auto-Aerienne, which controls the sale of Farman flyers in France, have recently acquired a flying ground giving a circuit of



"Flight" Copyright.

FLYING MACHINES AT BROOKLANDS ON EASTER MONDAY.—Mr. A. V. Roe starting away on his triplane.

3 kiloms. Apart from this, however, there are immense plains all round over which flying is possible, while for cross-country excursions the distant Cathedral tower at Chartres forms a convenient landmark. It is probable that Mr. Henry Farman will inaugurate his new school by endeavouring to break the various world's records which he already holds.

The Marseilles Meeting.

THE opening meeting of the Crau aerodrome near Marseilles, which commenced on Sunday, did not altogether pass off happily. Four flyers—Dufour on a Demoiselle, Metrot and Nogues on Voisins, and Hauvette-Michelin on an Antoinette, did several short flights, but nothing very noteworthy was accomplished. On the following day the wind was against the flyers, and the large crowd which gathered got impatient and indulged in a good deal of damage, as the force of gendarmes proved quite inadequate. Later in the afternoon, Metrot and Nogues on the Voisin made one or two short trials which appeased the crowd, while Hauvette-Michelin landed himself and his machine in the canal.

Leblanc Loses His Propeller.

WHILE flying at Pau on the 26th ult. Leblanc had an alarming accident. He was flying at a height of about 200 metres, when his propeller came off and the Blériot monoplane commenced to descend very rapidly. Fortunately, the aviator had the presence of mind to re-adjust his planes, and so was able to glide down to safety.

A Blériot School at Chalons.

HAVING obtained a concession for Blériot monoplanes for the East of France, M. Borel has established a school at Chalons Camp, where a series of sheds have been erected between those of the Voisin and Farman schools. Four monoplanes have been installed for tuition purposes, but, in addition to these, there are a dozen machines belonging to clients.

Gordon-Bennett Race at St. Louis.

It is now practically certain that the race for the Gordon-Bennett Aviation Cup will be held at St. Louis, on October 10th, while a week later the start for the Gordon-Bennett Balloon Cup will take place from the same city.

Orville Wright has a Tumble.

WHILE giving exhibition flights at Montgomery, Alabama, on Monday last, Orville Wright came down suddenly from a height of 100 feet, and although the machine was badly damaged the aviator escaped practically unhurt.

French Flyers for the German Army.

It is reported from Berlin that the German Minister for War has decided to purchase an Antoinette monoplane and a Henry Farman biplane for the purpose of instructing officers in the German Army.

Nazzaro to Fly.

No doubt finding his old vocation gone, Nazzaro is turning his thoughts towards flying. To that end he has acquired a Voisin biplane, and hopes to become proficient in time to take part in the principal meetings of the year.

A Meeting for Palermo.

It is reported from Palermo that Chevalier Vincenzo Florio has announced his intention of organising a flying meeting at that town at the same time as the Targa Florio race meeting.

An Italian Flying School.

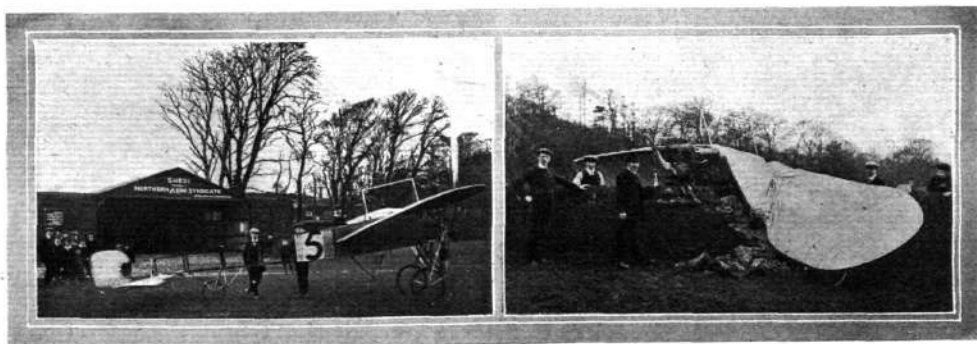
SIG. LEONINO DA ZARA has organised a flying school at Bovolenta, by Padua, where it is said that he already has eight machines, including three Blériots, two Santos-Dumont "Demoiselles," Rougier's old Voisin, an Avis, and another monoplane fitted with an Anzani motor.

Van den Born at Florence.

VAN DEN BORN was the star turn at the opening of the meeting at Florence on Monday and made a flight lasting half an hour, subsequently making eight trips with various passengers, the total time so occupied being 1 hr. 20 mins. The only other flyer on the opening day was Cordonnier, who made a series of short trials on a Blériot monoplane.

Russia Orders Two Zodiacs.

THE RUSSIAN Government are evidently determined not to be behindhand in the matter of airships, and have decided to add to their present fleet two Zodiac vessels of 2,000 cubic metres each.



Last week the Blériot monoplane which is being exploited by Mr. Albert House, Managing Director of the Northern Aero Syndicate at Bradford, was out for practice at the Company's Apperley Bridge flying ground, and some interesting short flights were obtained. Unfortunately, at the finish, when taking a turn to avoid a wall, the machine came to grief. Our photographs above show the machine before and after the mishap. In the left-hand photo is Mr. J. W. House, at the wheel, and standing behind the figure 5 is Mr. Albert House, junr. In the right-hand photograph, from left to right, are Mr. J. W. House, Mr. Albert House, junr., and Mr. Albert House.

CORRESPONDENCE.

*. * The name and address of the writer (not necessarily for publication) MUST in all cases accompany letters intended for insertion, or containing queries.

Correspondents asking questions relating to articles which they have read in **FLIGHT**, would much facilitate our work of reference by giving the number of the letter.

NOTE.—Owing to the great mass of valuable and interesting correspondence which we receive, immediate publication is impossible, but each letter will appear practically in sequence and at the earliest possible moment.

AERONAUTICS FOR THE NAVY.

[429] Surely your correspondent, Mr. Harold Ingersoll, in his letter on the above subject, published on March 19th, has treated the aeroplane somewhat harshly.

In the first place, scouting duties, if performed by air "vessels," should consist of a succession of short, quick passages for observation purposes only over the enemy's fleet or ports, a return being made to the parent fleet as soon as possible in order to keep this fleet constantly in touch with the enemy's movements.

Such being the case, the aeroplane would appear to be much more suited for this purpose, firstly, on account of its speed, and, secondly, on account of its smaller bulk in connection with detection purposes.

Only under most exceptional circumstances would these scouts be employed if a gale were expected, and then, owing to its speed, and consequent quickness of return, the aeroplane should be favoured.

We must, therefore, for all practical purposes, dismiss from our mind's eye the vivid picture your correspondent presents, *re* "green tumbling seas and clouds of stinging spray flying mast high, &c." How does Mr. Ingersoll propose to supply the deficit of "reserve buoyancy" in an aeroplane, *i.e.*, a machine heavier than air?

For fleet work there would appear to be no advantage in a dirigible being able to contain its gas for ten days, as at the end of this period this must be replenished, presumably by one of the parent ships, whereas, of course, this is unnecessary with an aeroplane.

Would not increased horse-power of the dirigible's engines reduce its susceptibilities to making leeway, as, if it were only a question of increasing its speed, this might be done by so altering its shape or form as to reduce its resistance, but probably at the expense of its buoyancy, *i.e.*, weight-lifting and gas-holding capacities?

A. SYDNEY GUSH,
Engineer-Lieutenant, Royal Navy.

[430] In the discussion, "Aeronautics for the Navy," why should not each ship have a biplane glider, which could be flown as a kite, with one or two men in it? The machine could be fitted with a double canoe instead of skids, so that it would float if it came down in the sea. If it was made like my machine it could rise straight off the deck, and would be worked with a rope; if a steady pull was kept on the rope it would go on rising, and if the rope was slackened off the machine would glide down. The "Mayfly" is built in three sections, and can either be taken to pieces, leaving three box girders, in which case it can be stowed away in a space 15 ft. by 10 ft., or else by loosening the wire strainers all the stanchions can be slipped out, and one plane laid flat on the top of the other, and the spars, fore and aft, are quickly taken off.

This would be a cheap and efficient way of taking observations from a height. Perhaps it has already been done.

LILIAN E. BLAND.

A PERFECT MODEL.

[431] Enclosed herewith are three photos of a $\frac{1}{16}$ scale model Blériot (c.c. type) monoplane which we have just completed.

Weight approximately $7\frac{1}{2}$ ounces. The planes are made of wood, body is braced up with wire, and chassis is provided with sufficient elastic to absorb shock on alighting.

After giving the elastic motor sufficient turns it will run along a smooth floor at a furious rate for about 20 ft., and then will gracefully rise into the air.

The preliminary trials, which took place the other day, proved highly satisfactory, and the machine behaved splendidly.

We are now fitting another tractor screw, of original design, from lengthy experiments, and it promises, by recent bench tests, to give really wonderful results.

Hoping the three enclosures may be of interest to your readers, should you decide to reproduce them in your invaluable journal, **FLIGHT**.

Lowestoft.

R. AND L. RICHARDS.

ANEMOMETERS.

[432] With reference to the letters of Mr. Norman Bowater, and the later one of A. C. H. (421), the form of gauge proposed by Mr. Bowater will certainly be liable to give erroneous results without certain precautions. The second opening being situated behind a plate will be in a region of reduced pressure—the amount of which will depend on the size of the plate and the position of the tube with regard to it, as well as by the velocity; if the plate should not be quite squarely facing the wind other effects will arise which will render the readings of no value whatever. I do not think A. C. H.'s proposed ferrule would effect any useful result, but the addition of a flange would—in the absence of plate—be of some use, but even with this the results will be misleading if the direction of the air-current is not exactly at right angles to the aperture. Probably A. C. H.'s suggestion of turning the second tube in the opposite direction to the pressure-tube will be best, and with no plate or shield on either. In this case the reduction of pressure in the second tube will assist the pressure on facing tube, and give a more open scale. I should suggest the use of any fluid rather than water in the gauge; paraffin, or glycerine and water, would be better, as owing to its high surface tension pure water is a most annoying fluid to work with. A slightly viscous fluid would be an advantage, as it would tend to damp out the oscillations which occur.

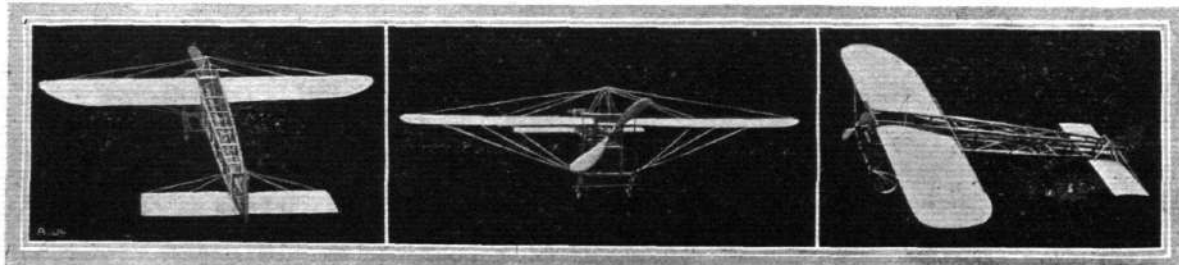
The pivoted gauge suggested by A. C. H. is practically identical with Lind's anemometer, the use of which is now, I believe, almost obsolete, and which in any case would not be very convenient for use with low air velocities. The most convenient form of portable instrument now on the market is probably Dine's portable pressure-tube, and Dine's head is the pattern in general use for stationary purposes. In this the pressure-tube is attached to a vane so that it always faces the wind, and the second limb of the gauge is connected to a tube which is drilled with a ring of small holes—so that the effect is the same whatever the direction of the wind. The question as to the means to be adopted for accurately reading the pressures—referred to by A. C. H.—is another matter, and would be too lengthy to deal with here.

Bath.

B. ROBERTS.

OLYMPIA AND FINALITY IN DESIGN.

[433] May I, from a position of "greater freedom and less responsibility," endorse your remarks on the very disappointing character of the recent "Show." I am one of those whose imagination was fired by the "freaks" in last year's Exhibition, when a long smouldering interest and much study of the new science were brought to the point of actual constructional experi-



Messrs. R. and L. Richards' perfect model.

ment by what was then demonstrated as possible, probable, and impossible.

In my case the result has been the construction of a new type entirely of aeroplane, now undergoing its trials. It has absorbed much time, more money, and all patience; but, at least, it is *new*, and not one of the gorgeous copies lately on show.

But, in this Exhibition, I have seen little new, and nothing provocative. There are endless beautiful copies of the two accepted types; it appears to be taken for granted that there are only two possible types! Our constructors have taken the biplane (with or without tail, &c.), and the monoplane; they have varied the details infinitely, and—turned out nothing to show any material advance on what has been done elsewhere. And it is really curious that a nation, inventive and ingenious as is ours, should have been hypnotised in this way by a cross-Channel flight, and by the achievements of the biplane school. It is really curious that we should have already come to the conclusion that there is no other design or arrangement of planes possible. It is not only curious, it is fatuous nonsense, and, to me, at least, very disappointing and tragic.

All honour be, however, to Mr. Roe, one of the "cranks" who has won through—whatever one may think of his design; and honour, too, to Weiss, whose wonderful glider was, to my lasting regret, not on show. And let us hope that the next Exhibition will contain a few really British machines and not be confined to the beautiful replicas characteristic of the Exhibition which has just closed.

Belvedere.

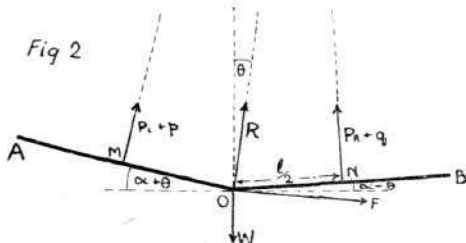
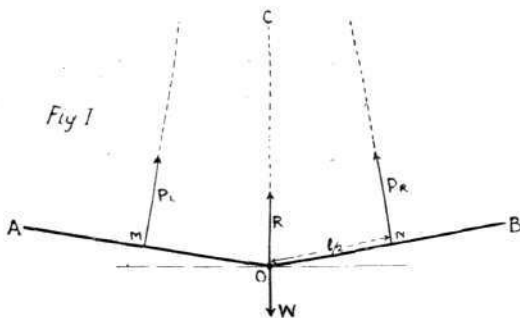
A. THIERSCH.

THE DIHEDRAL ANGLE.

[434] With reference to the recent discussion in your paper on the dihedral angle, I beg leave to submit my views on the subject.

Fig. 1 represents an aeroplane in its normal position, whose wings OA and OB, each 7 feet long, are inclined at a dihedral angle 2α .

Let P_L and P_R denote the normal pressures on OA and OB respectively.



Now we may replace P_L and P_R by a single force R , which will always pass through O and be the bisector of the angle MCN.

Now we have, remembering $P_L = P_R$

$$W = R = (P_R + P_L) \cos \alpha = 2P \cos \alpha.$$

Fig. 2 represents the same aeroplane, but having a lateral cant of θ .

P_L , P_R and R are still unchanged, but owing to the fact that R is inclined θ to the vertical, the aeroplane slightly falls, thus causing extra pressures, p and q say, on OA and OB.

So we get $2P \cos \alpha \cos \theta + p \cos (\alpha + \theta) + q \cos (\alpha - \theta) = W$, or $p \cos (\alpha + \theta) + q \cos (\alpha - \theta) = W (1 - \cos \theta)$.

Now if θ be small, say less than 30° , p and q may be neglected and the resultant of W , R , p and q may be taken as a force F acting along OF and perpendicular to OC, where $F = W \sqrt{2(1 - \cos \theta)}$.

Now since OF is perpendicular to OC, the path of the aeroplane will describe (laterally) is an arc of a circle of radius OC (Fig. 3).

Now, if the aeroplane had no resistance to lateral motion, it would describe a series of oscillations, OY, ZYO, &c., about O, whose period, &c., could be determined by the laws of harmonic motion.

But in every practical aeroplane this resistance is considerable, and so these oscillations are speedily damped and the aeroplane comes to rest at Y.

This investigation is of practical interest as it gives the distance an aeroplane falls in the act of righting (a frequent cause of disaster), this distance being

$$OC [1 - \cos \theta + 1 - \cos \theta' + 1 - \cos \theta'' \dots \infty] \quad (A),$$

where θ , θ' , θ'' , &c., are the successive values of the maximum cant on either side of CY.

But in all practical cases θ'' , θ''' , &c., may be neglected, so we have that expression (A) equals

$$\frac{l}{2} (2 - \cos \theta - \cos \theta').$$

Apologising for taking up so much valuable space.

Waterloo, Liverpool.

W. W. HASTINGS RIDER.

BLÉRIOT MODEL WORKING DRAWINGS WANTED

[435] I am about to construct a Blériot monoplane (model), and would be very pleased if any of your readers could supply me with drawings of the same.

It might interest you to know that I have already constructed a man-lifting kite, which I propose to practise with this season, and I have also in the course of construction a glider.

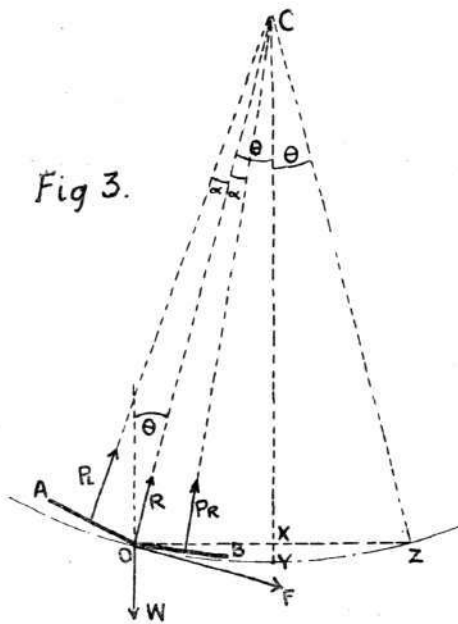
I wish every success to your excellent paper.

Scarborough.

R. TYZACK.

MODEL PETROL ENGINES.

[436] Having been a constant reader of your valuable paper for some months, I have constructed a scale model of the famous



Antoinette monoplane, and intend fitting it with a small petrol engine of about 4-h.p.

Could you recommend any book on these small engines, and how is it possible to regulate the length of flight of a machine worked by one?

Brownwood Park.

R. W. SPOONER.

[We are not aware of any book on the subject mentioned. We would suggest that limiting the fuel supply would be the most satisfactory method of limiting the length of flight.—ED.]

WRIGHT MODELS.

[437] In answer to (279) FLIGHT, G. Alchin, Tunbridge Wells, regarding models of Wright machines.

1. If he tries 2.8 in. Cochrane propellers he will find them

powerful enough for his biplane. One of the Cochrane's will have to be mounted wrong side out, and the curve turned.

2. For flat rubber (Dunlop), C. Lucas, Hobbies, 116, Dale Street, Liverpool.

3. For gear-wheels, Cochrane's, 26, Clarges Street, Piccadilly, W., can supply them.

4. This is beyond me, but I hope to see some other correspondent take it up.

Hoping this may be of use to your correspondent.

Birkenhead. G. R. CAMPBELL.

ELLIOTT'S EARLY WORK—INFORMATION WANTED.

[438] In connection with some research work, I much desire to complete a bibliographical reference relating to a Mr. Elliott, a United States aeronaut. I wish to locate any published descriptions of ascents under by Mr. Elliott. I have found some references to Elliott as follows:—

On page 461 of Hatton Turnor's "Astra Castra" in the roll of the first 500 aeronauts, Elliott is mentioned for the year 1834. References are made in Niles' "Register," Vol. 47, pages 146, 156, and 165. On p. 165, for example, it says:—"The *Charleston Mercury* gives some particulars of Mr. Elliott's voyage from that place last week." (Nov. 1st week, 1834, I take it to be.)

Can you inform me where there is any public account of any ascents by Elliott—especially any ascents from Baltimore, Md.?

I should be glad also if you would insert this request in your periodical, so that in case it may come before the attention of any having the knowledge requested, I might ascertain the same?

Any communication to me will receive a prompt acknowledgment, and I will appreciate any favour that may be extended in connection with this request.

2, Earl Street, Toronto, Canada. ARTHUR V. WHITE.

MODEL PROPELLER WANTED.

[439] Will you please let me know the size of a propeller, and also where I could obtain a suitable one, for a monoplane about 4 ft. 6 ins. across the wings and about 9½ ozs. in weight.

Are geared motors any good? If so, which are the most suitable? Would strip or square elastic be preferable? Wishing your splendid paper every success.

Sheffield. W. H. GOULD.

[Several firms advertising in FLIGHT are prepared to supply suitable propellers for different machines. If any reader has made a model about this size perhaps he will also assist our correspondent. —ED.]

MODEL MOTOR WANTED.

[440] I should be very pleased if you, or one of your correspondents, can give me the sketch for a clockwork or elastic motor for the model of a Santos-Dumont machine. I have tried various ways. I am a constant reader of FLIGHT, which I am sure is a great help to model makers. My machine is constructed from drawings in FLIGHT, No. 40, October 2nd. Scale of ½".

Huddersfield. IRVINE HOYLE.

POINTS TO NOTE.

THE Aluminium Castings Company are making a speciality of aerial work. Their head foundry at Greenock is fitted up with up-to-date hydraulic moulding plant for repetition work, while the London branch is very busy with work of an intricate character for well-known firms. As only virgin metal is used good sound castings can be relied upon.

PUBLICATIONS RECEIVED.

Aerial Navigation. By Sir George Cayley, Bart. *Aeronautical Classics*, No. 1. London: (for the Aeronautical Society of Great Britain) King, Sell, and Olding, 27, Chancery Lane. Price 1s. net.

Aerial Locomotion. By F. H. Wenham. *Aeronautical Classics*, No. 2. London: (for the Aeronautical Society of Great Britain) King, Sell, and Olding, 27, Chancery Lane. Price 1s. net.

Catalogue.

"Bowden Album," 1910. E. M. Bowden's Patents Syndicate, Ltd., Baldwin's Gardens, Gray's Inn Road, W.C.

DIARY OF FORTHCOMING EVENTS.

British Events.

| 1910. | 1910. | 1910. | 1910. |
|------------|----------------------|--------|--|
| July 11-17 | Bournemouth Meeting. | Flight | Aug. 6-13 Flight Meeting, place not fixed. |

Foreign Events.

| 1910. | 1910. | 1910. | 1910. |
|-----------------|----------------|-----------------|--|
| April 2-10 | Biarritz. | July 14-24 | Rheims to Brussels, cross country event. |
| April 3-10 | Cannes. | July 24-Aug. 10 | Belgium. |
| April 10-25 | Nice. | Aug. 25-Sept. 4 | Deauville. |
| May 10-16 | Berlin. | Sept. 8-15 | Bordeaux. |
| May 14-22 | Lyons. | Sept. 24-Oct. 3 | Milan. |
| May 20-30 | Verona. | Oct. 18-25 | America. Gordon-Bennett Balloon Race. |
| June 5-12 | Vichy. | Oct. 25-Nov. 2 | America. Gordon-Bennett Aeroplane Race. |
| June 5-15 | Budapest. | | |
| June 18-24 | St. Petersburg | | |
| June 26-July 10 | Rheims. | | |

Aeronautical Patents Published.

Applied for in 1908.

Published March 31st, 1910.

22,307. F. E. BARON AND F. TINGLE. Aerial machines.

Applied for in 1909.

Published March 31st, 1910.

| | | |
|---------|--------------------------------|------------------------------|
| 5,649. | J. E. DUGGAN. | Aeroplanes. |
| 6,500. | S. J. PRZYJEMSKI. | Flying machines. |
| 8,285. | L. G. DAVIES. | Aeroplanes. |
| 9,635. | I. H. STOKLEY. | Flying machines. |
| 13,417. | J. SCHUTTE. | Airships. |
| 19,198. | W. J. POTTER. | Aeroplanes. |
| 23,166. | A. E., H. L., AND H. O. SHORT. | Rudders or elevating planes. |
| 23,845. | J. MEEK. | Flying machines. |

BACK NUMBERS OF "FLIGHT."

SEVERAL back numbers are now very scarce, and have been raised in price as follows:—

| No. | 2, Jan. 1909. | g, containing Table of Propellers ... | s. d. |
|-------------|---------------|---------------------------------------|-------|
| 3 | " 16 " | " Engines ... | 1 6 |
| 4 | " 23 " | Engines at Paris Salon ... | 3 0 |
| 6, Feb. 6 | " " | "How Men Fly" ... | 3 6 |
| | | Aeronautical Bibliography. | 1 0 |
| 8 | " 20 " | Wright Bros.' Elevator Patents. | 1 0 |
| | | Flying Ground at Farnbridge | 1 0 |
| 10, Mar. 6 | " " | Illustrated Glossary. | 1 0 |
| | | Human Side of Flying ... | 1 0 |
| | | Aero Club Ground at Shellbeach. | 1 0 |
| | | Military Aeronautics. | 1 0 |
| 12 | " 20 " | Souvenir Supplement ... | 1 6 |
| 15, Apr. 10 | " " | Engines at Olympia ... | 1 0 |
| 16 | " 17 " | Prize List ... | 3 6 |
| | | Models at Olympia. | 2 0 |
| 31, July 31 | " " | Blériot Flyer ... | 2 0 |
| | | (Full page drawing.) | |

Other back numbers, post free, 1½d. each (including descriptions and scale drawings of the Voisin, Curtiss, Cody and Farman biplanes, the Santos Dumont, Antoinette, and Grade monoplanes, and of a full-size Wright glider.

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